

Serial No. 10/566,053
Reply to Office Action dated October 12, 2010

Docket No. 1006/0148PUS1

REMARKS/ARGUMENTS

Favorable reconsideration and allowance of the present application is respectfully requested. Claims 1 and 5-39 are pending in the above application, of which claims 1, 22 and 36 are independent. By the above amendment, claims 37-39 have been added, and claims 2-4 have been cancelled without prejudice.

The Office Action dated October 12, 2010, has been received and carefully reviewed. In that Office Action, the drawings were objected to and claims 3, 24 and 25 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 1-4, 11, 12, 17-21, 24, 26 and 28-36 were rejected under 35 U.S.C. 102(b) as being anticipated by Karlsson, claim 10 was rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson, and claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view of Skoog and further in view of Andersson. Claims 6-9, 14 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view of Kivikas and further in view of Andersson, claim 13 was rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view of WO 85/02670 (hereinafter, "Bergqvist"), claims 15 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view of Skoog, and claims 24 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view Mosher and JP 2001-056192 (hereinafter, "Munoz"). Claim 22 was objected to as being dependent upon a rejected base claim but was indicated to be allowable if rewritten in independent form. It is believed that all claims are allowable over the art of record, and reconsideration and allowance of claims 1, 5-21 and 23-39 is respectfully requested in view of the above amendments and following remarks.

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ALLOWABLE SUBJECT MATTER

The Office Action indicates that claim 22 would be allowable if amended to include the limitations of its base claim. This has been accomplished by the above amendment. Claim 22 is therefore submitted to be in condition for allowance.

DRAWING OBJECTIONS

The drawings are objected to for failing to show certain feature recited in claims 22 and 35. The Office Action indicates that the "profile free bending portion" of claim 22 is not illustrated. It is respectfully submitted that at least Figures 8 and 9 show a gap 37 between the end of the profiles (or nested elbow patterns) and the bent edge 36 of the plates which gap is an example of a structure that satisfies the "profile-free bending portion" limitation. While these regions would be blocked with solder upon brazing, as discussed at page 25, lines 21-31, this limitation has been removed from the claim. The Office Action also indicates that the claim 35 limitation of openings interrupting a wavy profile (now nested elbow patterns) is not illustrated. It is respectfully submitted that at least Figures 1a and 1b support this limitation where openings 18 interrupt the wavy profiles / nested elbow patterns. The foregoing claim limitations are illustrated in the drawings as discussed above, and the withdrawal of the drawing objections is therefore respectfully requested.

The overall quality of the drawings was also objected to. Formal drawings will be submitted.

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REJECTIONS UNDER 35 U.S.C. 112, SECOND PARAGRAPH

Claim 3 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite. By the above amendment, claim 3 has been cancelled without prejudice, thereby obviating the rejection.

Claim 24 was rejected because the claim did not include antecedent basis for the phrase "the main direction of extent." By the above amendment, this phrase has been amended to "a main direction of extent" to address this issue.

Claim 25 was rejected because it was not clear whether one or both of two ranges was being claimed. By the above amendment, claim 25 has been amended to indicate that the hydraulic diameter can be either between 1 mm and 2 mm or around 3 mm.

The withdrawal of the rejections of claims 3, 24 and 25 under 35 U.S.C. 112, second paragraph, is respectfully requested in view of the above amendments and foregoing remarks.

REJECTIONS UNDER 35 U.S.C. 102(b)

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Karlsson. Claim 1 as amended recites a heat exchanger for motor vehicles, the heat exchanger being formed from interconnected plates, there being formed between the plates cavities which are closed off outwardly and through which a first and a second medium flow alternately in each case via at least one inflow line and outflow line. The plates are profiled in such a way that, between the respective profiles of the plates, contact points occur, in the region of which the plates are fastened to one another, wherein the profiles of the plates and their contact points are designed in such a way that the flow,

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formed between the plates, of the first and the second medium from the corresponding inflow line to the corresponding outflow line does not run rectilinearly. Also, each of the plates has a plurality of columns of nested elbow patterns each column running in a length direction of the interconnected plates, each of the plurality of nested elbow patterns comprising rectilinear legs connected by regions of curvature. Support for the amendments to claim can be found, for example, in Figures 1a and 1b. Karlsson discloses heat exchanger plate having V-shaped patterns, but does not show or suggest a plate having a plurality of columns of nested elbow patterns as recited in amended claim 1. Claim 1 as amended is submitted to be allowable over Karlsson for at least this reason.

Claims 2-21, 23-35 and 37-39 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

Independent claim 36 recites a heat exchanger for motor vehicles formed from interconnected plates, there being formed between the plates cavities connected to at least one inflow line and at least one outflow line to define first and second alternating flow paths. Claim 36 also recites that the plates are embossed with a zig-zag profile comprising leg portions connected by curved portions, the leg portions in section comprising ridges having flat tops and valleys having flat bottoms, and that portions of the flat tops of a first one of the plates contact portions of the flat bottoms of an adjacent one of the plates at contact points. The contact points are arranged to prevent fluid from flowing between the first one of the plates and the second one of the plates rectilinearly from the inflow line to the outflow line. The specific limitations of claim 36 are not mentioned in the Office Action. The Office Action may be interpreting a cross

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section of Karlsson as satisfying the "zig-zag" limitation; however, under this interpretation, the limitation the leg portions in section having flat tops and valleys having flat bottoms is not satisfied. Claim 36 is submitted to be allowable over Karlsson and the other art of record for at least this reason.

If the rejection of claim 36 is maintained, it is respectfully requested that the examiner explain 1) what portion of Karlsson is being interpret as a "zig-zag" pattern and 2) how legs of this zig-zag pattern, in section, have ridges having flat tops and valleys having flat bottoms.

REJECTIONS UNDER 35 U.S.C. 103(a)

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson. Claim 10 depends from claim 1. The modification to Karlsson discussed in connection with the rejection of claim 10 does not address the shortcoming of Karlsson discussed above in connection with claim 1. Claim 10 is therefore submitted to be allowable for at least the same reasons as claim 1.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view of Skoog and further in view of Andersson. Claim 5 depends from claim 1. Skoog and Andersson do not address the shortcomings of Karlsson discussed above in connection with claim 1. Claim 5 is therefore submitted to be allowable for at least the same reasons as claim 1.

Claims 6-9, 14 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view of Kivikas and further in view of Andersson. Claims 6-9, 14 and 27 depend from claim 1. Kivikas and Andersson do not address the shortcomings of

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Karlsson discussed above in connection with claim 1. Claims 6-9, 14 and 27 are therefore submitted to be allowable for at least the same reasons as claim 1.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view of Bergqvist. Claim 13 depends from claim 1. Bergqvist does not address the shortcomings of Karlsson discussed above in connection with claim 1. Claim 13 is therefore submitted to be allowable for at least the same reasons as claim 1.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view of Skoog. Claims 15 and 16 depend from claim 1. Skoog does not address the shortcomings of Karlsson discussed above in connection with claim 1. Claims 15 and 16 are therefore submitted to be allowable for at least the same reasons as claim 1.

Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson in view Mosher and further in view of Munoz. Claims 24 and 25 depend from claim 1. Mosher and Munoz do not address the shortcomings of Karlsson discussed above in connection with claim 1. Claims 24 and 25 are therefore submitted to be allowable for at least the same reasons as claim 1.

NEW CLAIMS

New claims 37-39 are also submitted to be allowable over the art of record, at least based on their dependency from allowable claim 1. Claim 37 further recites that the legs of the nested elbow patterns in adjacent columns are connected by curved embossment portions, and this is not shown or suggested in the art of record. Claim 38 recites a relationship among first, second and third columns of nested elbow patterns

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that is not shown or suggested by the art, and claim 39 further defines a section through one of the legs of the nested elbow patterns that is not shown by the art of record. Claims 37-39 are submitted to further distinguish over the art of record for these reasons.


CONCLUSION

Each issue raised in the Office Action dated October 12, 2010, has been addressed, and it is believed that claims 1 and 5-39 are in condition for allowance. Wherefore, reconsideration and allowance of claims 1, 5-21 and 23-39 is earnestly solicited. If the examiner believes that any additional changes would place the application in better condition for allowance, the examiner is invited to contact the undersigned attorney at the telephone number listed below.

Deposit Account Authorization

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 50-3828 and please credit any excess fees to such deposit account.

Respectfully submitted,



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